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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,533	04/27/2001	Tatsuhito Takahashi	01254C/HG	3735

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EXAMINER

MARCANTONI, PAUL D

ART UNIT	PAPER NUMBER
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1755

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DATE MAILED: 05/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/844,533

Applicant(s)

TAKAHASHI ET AL.

Examiner

Paul Marcantoni

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18, 19 and 21-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18, 19, and 21-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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Prior Art Rejection:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 19, and 21-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knopf et al. '174B2 or '736B1, Alexandre (FR 2735804), Ebihara et al. (JP 55042216), JP 07048186, SU 1084321, Kaminskis, or Am Contractor 1907 (Marble and Stone from Slag).

Knopf et al. teach it is old in the art to rapidly carbonate large cement structures including slag (see claims) and thus this carbonation technique would have been obvious to one of ordinary skill in the art. Knopf et al. do not teach for use underwater yet he also do not teach that it cannot be used underwater and it would appear that it is already known that other cement structures are known for use underwater and the use of a different cement structure's usage underwater would have been an obvious design choice for one of ordinary skill in the art.

Alexandre (FR '804) teaches a process for making construction blocks that are enriched with carbon dioxide or carbonated. Alexandre does not teach underwater usage yet this would appear to be an obvious design choice for one of ordinary skill in the art since other cement structures are known and old in the art for their usage underwater. The usage of another cement structure underwater is not seen to be a

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patenable distinction over the prior art because of prior usage of cement structures underwater.

Ebihara et al., JP '186 (Numata et al.), Gasik (SU '321), Kaminskas, and Am Contractor all teach that it is old in the art to carbonate slag structures such as blocks. These references would not appear to teach underwater usage. Again, The usage of another cement structure underwater is not seen to be a patentable distinction over the prior art because of prior usage of cement structures underwater. For these reasons, the use of a carbonated block of slag underwater would have been obvious to one of ordinary skill in the art.

35 USC 112 Second Paragraph:

Claim 55 is rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

The term "desired" is indefinite.

New Matter Rejection:

Claims 23, 24, 28, 29, 32, 33, 35, 42, 43, 46, 47, and 53 are rejected under the first paragraph of 35 USC 112 and 35 USC 132 as the specification as originally filed does not provide support for the invention as is now claimed.

In claim 23, the terms "and the carbonate is calcium carbonate" would not appear supported by the original disclosure.

In claim 24, there would also appear no support for the limitation of this claims including CaO, MgO, and calcium carbonate and magnesium carbonate.

Claims 28 , 29 , 42, and 43 contain iron oxide which is not supported by the original disclosure. While iron alone is, there is no support for iron oxide.

In claims 32, 33, 46, and 47, there is no support for "soluble" silica. While silica would appear part of slag, there is no mention of "soluble" silica and thus this is new matter.

Claim 35's range of 10 to 70% is not supported by the original disclosure.ⁱ However, "about" 10 to 70% is supported by the original disclosure. Insertion of "about" before 10 would resolve this issue.

In claim 53, there would appear no support for a carbon dioxide "saturated" with water (H₂O) and thus this is new matter.


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